

NODE=M227

 $a_0(1950)$

$$\mathcal{I}^G(J^P C) = 1^-(0^{++})$$

OMITTED FROM SUMMARY TABLE

Needs confirmation. Seen in $\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K\bar{K}\pi$ by LEES 16A with significance 2.5σ in $K_S^0 K^\pm \pi^\mp$ and 4.2σ in $K^+ K^- \pi^0$. Spin-2 explanation ($a_2(1950)$) is not compatible with data.

NODE=M227

 $a_0(1950)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$1931 \pm 14 \pm 22$	12k	1,2 LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K\bar{K}\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1949 $\pm 32 \pm 76$	8k	¹ LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K_S^0 K^\pm \pi^\mp$
1927 $\pm 15 \pm 23$	4k	¹ LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K^+ K^- \pi^0$

¹ From a model-independent partial wave analysis fit to a relativistic Breit-Wigner function with a floating width.

² Weighted average of the $K_S^0 K^\pm$ and $K^+ K^-$ decay modes.

NODE=M227M

NODE=M227M

OCCUR=3

OCCUR=2

NODE=M227M;LINKAGE=A

NODE=M227M;LINKAGE=B

 $a_0(1950)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$271 \pm 22 \pm 29$	12k	1,2 LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K\bar{K}\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
265 $\pm 36 \pm 110$	8k	¹ LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K_S^0 K^\pm \pi^\mp$
274 $\pm 28 \pm 30$	4k	¹ LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K^+ K^- \pi^0$

¹ From a model-independent partial wave analysis fit to a relativistic Breit-Wigner function with a floating mass.

² Weighted average of the $K_S^0 K^\pm$ and $K^+ K^-$ decay modes.

NODE=M227W

NODE=M227W

OCCUR=3

OCCUR=2

NODE=M227W;LINKAGE=A

NODE=M227W;LINKAGE=B

 $a_0(1950)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad K\bar{K}$	seen

DESIG=1

NODE=M227225

NODE=M227R01

NODE=M227R01

NODE=M227R01;LINKAGE=A

NODE=M227

REFID=57125

 $a_0(1950)$ BRANCHING RATIOS

$\Gamma(K\bar{K})/\Gamma_{\text{total}}$			Γ_1/Γ	
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
seen	12k	¹ LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K\bar{K}\pi$

¹ From a model-independent partial wave analysis.

NODE=M227225

NODE=M227R01

NODE=M227R01

NODE=M227R01;LINKAGE=A

NODE=M227

REFID=57125

 $a_0(1950)$ REFERENCES

LEES	16A PR D93 012005	J.P. Lees <i>et al.</i>	(BABAR Collab.)
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